Line Isolator
COM-LI-11140

COM-LI-11140-INS-Rev 0

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Introduction

The COMTEK COM-LI-1114 Line Isolator based on Jerry Sevick’s (W2FMI) designs prevents unwanted RFI in 50 Ω, coaxially fed antenna systems.

It provides excellent feedline decoupling and low loss performance from 1 to 60 MHz.

It is power-rated for 2 kW continuous, 5 kW intermittent. The COM-LI-1114 has significantly higher common mode impedance and a larger effective core area than similar line isolators, including conventional enameled wire or bead baluns. This results in:

- Higher power handling with lower loss – more power to the antenna
- Improved antenna bandwidth – easier on the radio
- Reduced RFI – less interference to and from your radio
- Compensate for a less than optimal ground system – Stop feedline radiation

If you suffer from RF interference, such as a "hot" mike or other equipment, disturbing audio equipment in your house or your neighbors while transmitting, your feedline may be acting as part of your antenna system.

While most common advice is to improve the station’s RF ground, the root of the problem is in the poor isolation of the feedline from antenna currents.

In other cases, as the coax feedline travels through the near-field of the antenna, the current can be re-introduced to the feedline after the balun. If your SWR is already low and you wish to reduce feedline radiation and improve reception, a COMTEK Line Isolator is recommended.

The COMTEK Line Isolator can be used with many varieties of antennas including verticals, verticals with elevated radials and center-fed vertical dipoles (half-wave verticals).

The COMTEK Line Isolator comes in a NEMA case with gasket mounted PTFE insulator / Silver Plated SO-239 connectors.

Installation

Install the COMTEK Line Isolator at the point where the feedline exits the area of the antenna. Both ends of the COMTEK Line Isolator are isolated SO-239 connectors. When hung vertically, note there are weep holes to allow condensation to escape and they should be pointing downward.

Normally, the COMTEK Line Isolator should be installed on the antenna side of the feedline. This will substantially reduce unwanted feedline radiation or unwanted signals without the need for an
improved antenna ground system. This is especially true for center-fed verticals or any antenna where the feedline parallels an active antenna element.

The Line Isolator is not affected by moisture and may be left outside in all types of weather, including heavy rain, as long as it is positioned so that water or condensation will drain from the case through the four small weep holes located on the bottom side (as looking at the label). However, the COMTEK Line Isolator may not be immersed in water and care should be taken to avoid blocking the drainage of any water that could get inside.

**Optional Balun Mounting Bracket - DXE-BMB-4P**

This custom made Balun Mounting Bracket (US Patent No. D597,086) and Stainless Steel Hardware Kit will allow you to mount your quality Comtek Line Isolator directly to a boom, pipe, radio room wall, etc. When used with optional **DXE-ECLS** Stainless Steel Band Clamps with Studs, you can mount this Balun Mounting Bracket on a boom or pipe ranging in size from 1/2” through 3-1/4”. To mount to a wall or wooden post, use appropriate size wood screws.

The unique design provides minimum capacitive coupling to the wire and field surrounding the Balun core plus a special UV resistant, strong black plastic compound. This custom made Comtek mounting bracket will fit other manufacturers’ similarly packaged Baluns.

Use the included Stainless Steel Hardware to mount the Balun as shown below. Choose the appropriate sized optional **DXE-ECLS** clamps and install them on the Balun Mounting Bracket as shown below. When installing stainless steel hardware, it is suggested that **PTX-81343, JTL-12555, DXE-NSBT8, NMCBT8 - Never-Seez® or Anti-Seize** be used to prevent thread galling.
Lightning Protection

Proper lightning protection should be installed for any antenna system. Lightning suppressors should be installed on the feedline before they enter the house. The suppressor normally grounds the feedline at that point.

See the DX Engineering web-site, www.dxengineering.com, for more information on lightning protection and grounding.

Technical Support

If you have questions about this product, or if you experience difficulties during the installation, contact COMTEK Systems at (330) 572-3200. You can also e-mail us at:
Info@ComtekSystems.com

For best service, please take a few minutes to review this manual before you call.

Warranty

All products manufactured by COMTEK SYSTEMS are warranted to be free from defects in material and workmanship for a period of one (1) year from date of shipment. COMTEK SYSTEMS’s sole obligation under these warranties shall be to issue credit, repair or replace any item or part thereof which is proved to be other than as warranted; no allowance shall be made for any labor charges of Buyer for replacement of parts, adjustment or repairs, or any other work, unless such charges are authorized in advance by COMTEK SYSTEMS. If COMTEK SYSTEMS’s products are claimed to be defective in material or workmanship, COMTEK SYSTEMS shall, upon prompt notice thereof, issue shipping instructions for return to COMTEK SYSTEMS (transportation-charges prepaid by Buyer). Every such claim for breach of these warranties shall be deemed to be waived by Buyer unless made in writing. The above warranties shall not extend to any products or parts thereof which have been subjected to any misuse or neglect, damaged by accident, rendered defective by reason of improper installation, damaged from severe weather including floods, or abnormal environmental conditions such as prolonged exposure to corrosives or power surges, or by the performance of repairs or alterations outside of our plant, and shall not apply to any goods or parts thereof furnished by Buyer or acquired from others at Buyer’s specifications. In addition, COMTEK SYSTEMS’s warranties do not extend to other equipment and parts manufactured by others except to the extent of the original manufacturer’s warranty to COMTEK SYSTEMS. The obligations under the foregoing warranties are limited to the precise terms thereof. These warranties provide exclusive remedies, expressly in lieu of all other remedies including claims for special or consequential damages. SELLER NEITHER MAKES NOR ASSUMES ANY OTHER WARRANTY WHATSOEVER, WHETHER EXPRESS, STATUTORY, OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS, AND NO PERSON IS AUTHORIZED TO ASSUME FOR COMTEK SYSTEMS ANY OBLIGATION OR LIABILITY NOT STRICTLY IN ACCORDANCE WITH THE FOREGOING.

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